Linzer biol. Beitr.	48/1	887-896	30.07.2016

Contribution to the knowledge of the Bryocorinae and Deraeocorinae (Hemiptera: Heteroptera: Miridae) fauna of Turkey

Gülten YAZICI & Erol YILDIRIM

A b s t r a c t : This study is based upon material of the subfamilies Bryocorinae and Deraeocorinae of family Miridae collected from different localities of Turkey between 1972 and 2014, mostly 2006-2014. The study resulted in recording for Turkish fauna of two species from one genera of Bryocorinae and eight species from two genera of Deraeocorinae are recorded from Turkey. Among them, *Deraeocoris* (*Deraeocoris*) *rutilus* (HERRICH-SCHÄFFER, 1838), *Deraeocoris* (*Deraeocoris*) *ventralis* REUTER, 1904, *Deraeocoris* (*Camptobrochis*) *pallens* (REUTER, 1904), *Deraeocoris* (*Camptobrochis*) *punctulatus* (FALLÉN, 1807) and *Deraeocoris* (*Camptobrochis*) *serenus* (DOUGLAS & SCOTT, 1868) have been found the most abundant and widespread species. In addition, new localities are added for some species previously reported for Turkey.

K e y w o r d s : Hemiptera, Heteroptera, Miridae, Bryocorinae, Deraeocorinae, Fauna, Turkey.

Introduction

Miridae (or plant-bugs) is a group of Miroidea, which at world scale comprises eight subfamilies. In the World they are represented by nearly 10.040 species, 1507 genera (CASSIS et al. 2006). This family comprising eight subfamilies Isometopinae, Psallopinae Cylapinae, Orthotylinae, Bryocorinae, Deraeocorinae, Mirinae and Phylinae, which among them Bryocorinae subfamily is a heterogeneous subfamily with three tribes (CASSIS & SCHUH 2012). There is a very important predator species in the subfamily Bryocorinae and Deraeocorinae. Many species are opportunists that feed along a continuum between the extremes of strict phytophagy and strict zoophagy (WHEELER 2001). Predators include generalists that feed on a wide range of small arthropods and their eggs, as well as specialists on mites (Acari), planthoppers (especially Delphacidae), thrips (Thysanoptera), armored scale insects (Diaspididae), and lace bugs (Tingidae) (WHEELER & SKAFTASON 2010).

Bryocorinae is by far the most agriculturally important and morphologically diverse subfamily of Miridae. They can be identified using claw characters (BASNAGALA 2002). Species in this subfamily are either harmful or beneficial. The harmful bugs are those that suck the plant sap and injure the plant or damage the reproductive organ. Bryocorinae, by the often stout mouthparts and tarsi, frequently single-celled hemelytral

membrane, and fleshy pseudopulvilli on the claws; Deraeocorinae, by the basally toothed claws and generally punctate pronotum and hemelytra (WHEELER & HENRY 2004).

Turkey occupies Asia Minor between the Mediterranean Sea and the Black Sea and stretches into continental Europe. It is a mountainous country averaging about 1.000 meters in altitude. The topographic and climatic diversity of the region are important preconditions for the development of a rich and diverse fauna.

Turkey is biogeographically one of the most interesting countries in the West Palaearctic region. Some faunistic studies on this family in the Turkey have been made by HOBERLANDT (1955), ÖNDER (1976), BINGÖL (1978), LODOS et al. (1978), ALTINAYAR (1981), ÖNDER et al. (1981), YAYLA (1983), ÖZKAN (1984), KARAAT (1986), ÖNDER & LODOS (1987), ÖZDEMIR & ALAOĞLU (1987), ÇAM (1988), LODOS et al. (1989), ÖNDER et al. (1990; 1998), ÖNCÜER (1991), YILDIRIM & ÖZBEK (1992), GÜÇLÜ et al. (1995a, b), ÇEVIK (1996), YAŞARAKINCI & HINCAL (1997; 2000), TEZCAN & ÖNDER (1999; 2003), YILDIRIM et al. (1999), ATAKAN (2000), BEYAZ (2000), ÖZSARAÇ & KIYAK (2001), LODOS (2003), GENÇER (2004), KIYAK et al. (2004), ÇETIN & ALAOĞLU (2005), AYYILDIZ & ATLIHAN (2006) and ÖNDER et al. (2006).

The aim of this paper is to present new collection and biological data on Bryocorinae and Deraeocorinae in Turkey.

Materials and Methods

The material of the Bryocorinae and Deraeocorinae was collected from different localities of Turkey between 1972 and 2014. In addition, in previous years collected material from different localities of Turkey, Ataturk University, Faculty of Agriculture, Department of Plant Protection, the Entomology Museum, Erzurum, Turkey (EMET) preserved in the collection is also evaluated. Provinces of the collected specimens are given in alphabetical order in the following list. The material is deposited in the Entomology Museum, Erzurum, Turkey (EMET).

Results

In this study, two species from one genera of Bryocorinae and eight species from two genera Deraeocorinae are recorded from Turkey.

Subfamily Bryocorinae CARVALHO, 1957

Tribe Dicyphini

Subtribe Dicyphina

Genus *Macrolophus* FIEBER, 1858

***Macrolophus costalis* FIEBER, 1858**

Material examined: Erzurum: Karaçoban, Duman, N 39°18′22″, E 041°55′5″, 1560 m, 26.VI.2011, ♀; Yakutiye, Atatürk University field, 1850 m, 1.VIII.1998, ♀, 18.VIII.1997, ♀, 24.VIII.1998, 2♀♀, ♂; Iğdır: Karakoyunlu, 844 m, 2.X.2013, ♂.

D i s t r i b u t i o n i n T u r k e y : Artvin, Bilecik, Bursa, Kütahya (ÖNDER 1976); Bolu, İstanbul, Kocaeli, Sakarya (ÖNDER et al. 1981); Aksaray, Antalya, Çankırı, Çorum, Eskişehir, Hatay, İçel, Kahramanmaraş, Kastamonu, Kayseri, Kırıkkale, Kırşehir, Konya, Nevşehir, Niğde, Osmaniye, Sinop, Zonguldak (LODOS et al. 2003); Ankara (ÖNDER et al. 2006); İzmir (TEZCAN et al. 2010).

***Macrolophus melanotoma* (A. COSTA, 1853)**

M a t e r i a l e x a m i n e d : Erzurum: Çat, Yaylasuyu Geçidi, 2322m, 29.VI.2009, ♀.

D i s t r i b u t i o n i n T u r k e y : Ankara (ÖNDER 1976; ÖNDER et al. 2006); Mardin (MATOCQ et al. 2014).

Subfamily D e r a e o c o r i n a e

Tribe D e r a e o c o r i n i

Genus *Alloeotomus* FIEBER, 1858

***Alloeotomus gothicus* (FALLÉN, 1807)**

M a t e r i a l e x a m i n e d : Erzurum: Yakutiye, Atatürk University field, 1850 m, 24.VII.1997, ♂, 2.VIII.1998, 2♂♂.

D i s t r i b u t i o n i n T u r k e y : Kütahya (ÖNDER 1976); Artvin, Muğla (ÖNCÜER 1991); Kastamonu (LODOS et al. 2003); Bolu (ÖNDER et al. 2006).

Genus *Deraeocoris* KIRSCHBAUM, 1856

Subgenus *Deraeocoris* KIRSCHBAUM, 1856

***Deraeocoris* (*Deraeocoris*) *ruber* (LINNAEUS, 1758)**

M a t e r i a l e x a m i n e d : Antalya: 30.VIII.1984, ♀, 6.IX.1984, ♀; Erzurum: İspir, Madenköprübaşı, N 40°26′33,7″, E 040°50′41,6″, 1244 m, 24.VI.2012, ♀.

D i s t r i b u t i o n i n T u r k e y : Ankara, Burdur, Denizli, İstanbul, Kütahya, Samsun (ÖNDER 1976); Bolu, Sakarya (ÖNDER et al. 1981); Antalya (ÖZKAN 1984); Bartın, Çankırı, Eskişehir, Karabük, Karaman, Kastamonu, Zonguldak (LODOS et al. 2003; ÖNDER et al. 2006); Bursa (GENÇER et al. 2004); İzmir (TEZCAN et al. 2010).

***Deraeocoris* (*Deraeocoris*) *rutilus* (HERRICH-SCHÄFFER, 1838)**

M a t e r i a l e x a m i n e d : Adıyaman: Nemrut, 1650 m, 2.VII.2008, ♀; Amasya: 14.VII.1993, 3♀♀; Ankara: Kızılcahamam, Sipahiler, 975 m, 16.VII.2011, ♀, ♂; Erzincan: 1185 m, 10.VI.2010, ♀, Mercan, 1381m, 10.VI.2010, ♀; Erzurum: Aziziye, Rizekent, 2070 m, 30.VII.2010, ♀, ♂; Hınıs, N 39°52′33″, E 041°16′46″, 1955 m, 26.VI.2011, ♂; İspir, Elmalı, N 40°25′31.9″, E 040°50′13.6″, 1328 m, 20.VII.2011, ♀, Madenköprübaşı, N 40°26′33.7″, E 040°50′41.6″, 1244 m, 24.VI.2012, 2♀♀, 2♂♂, Petekli, N 40°26′50.1″, E 040°54′52.5″, 1201m, 24.VI.2012, ♀, Yukarı Özbağ, N 40°26′45.1″, E 040°54′24.8″, 1190 m, 20.VII.2011, 2♀♀; Narman, Göllü, N 40°14′7.9″, E 041°51′57.2″, 1083m, 30.VII.2011, ♂; Oltu, Sütkans, 25.VI.1996, ♀; Palandöken, 2400 m, 1.VII.1996, ♂, 23.VII.1996, 2♀♀, ♂; Pazaryolu, N 40°25′13.1″, E 040°46′13.9″, 1445 m, 20.VII.2011, ♀, ♂, N 40°25′12.1″, E 040°47′07.7″, 1495 m, 24.VII.2011,

3♀♀, 3♂♂, 1453m, 30.VII.2010, ♀, 1010 m, 7.VIII.2009, 10♀♀; Şenkaya, 1815 m, 31.VII.2010, ♀, Turnalı, 1461m, 31.VII.2010, ♀, 6.VIII.1988, 3♀♀, 2♂♂; Isparta: Ayazmana, 1100 m, 30.VII.2011, ♀.

D i s t r i b u t i o n i n T u r k e y : Amasya, Aydın, Balıkesir, Bilecik, Burdur, Denizli, Isparta, Kırklareli, Kütahya, Muğla, Muş, Siirt, Sinop, Tekirdağ, Uşak (ÖNDER 1976); İstanbul, Kocaeli, Sakarya (ÖNDER et al. 1981); Antalya (ÖZKAN 1984); Tokat (ÇAM 1988); Kahramanmaraş, Kayseri (KIYAK 1990); Gaziantep, Siirt (ÖNDER et al. 1995); Çanakkale (ÖZSARAÇ & KIYAK 2001); Adana, Bolu, Çankırı, Çorum, Eskişehir, Hatay, İçel, Karabük, Karaman, Kastamonu, Kırşehir, Kilis, Konya, Osmaniye (LODOS et al. 2003); Manisa (TEZCAN & ÖNDER 2003); Bursa (GENÇER et al. 2004); Nevşehir (KIYAK et al. 2004); Almost all regions (ÖNDER et al. 2006); Ankara (KIYAK & AKAR 2010); İzmir (TEZCAN et al. 2010); Diyarbakır, Elazığ, Mardin (MATOCQ et al. 2014).

***Deraeocoris* (*Deraeocoris*) *ventralis* REUTER, 1904**

M a t e r i a l e x a m i n e d : Bayburt: Kop Mountain Pass, 2344 m, 12.VIII.2009, ♂, Demirözü, 1650 m, 17.VI.2010, ♀; Erzincan: 1185 m, 10.VI.2010, 2♀♀, Refahiye, 1500 m, 20.VI.2009, ♀, 3♂♂; Erzurum: Aşkale, Gölören, N 40°01′28.9″, E 040°47′55.1″, 1897 m, 18.VII.2012, ♀, Hatuncuk, N 39°48′15.6″, E 040°42′09.3″, 1846 m, 5.VII.2012, ♀, Küçükgeçit, N 39 °56′21.0″, E 040°44′21.4″, 1666 m, 19.VI.2012, ♀, 3♂♂, Merdiven, N 39°54′46.8″, E 040°47′57.9″, 1688 m, 19.VI.2012, ♂, Tazegül, N 39°55′40.4″, E 040°51′58.3″, 1773m, 19.VI.2012, ♀, ♂, Yeniköy, N 39°51′28.8″, E 040°41′24.1″, 1935 m, 5.VII.2012, ♂; Aziziye, Başçakmak, N 40°00′09.8″, E 040°54′48.1″, 1863m, 24.VI.2012, ♀, Ortabahçe, N 39°53′35.3″, E 040°51′19.0″, 1763m, 5.VII.2012, ♀, 3♂♂, Yoncalık, 1900 m, 16.VIII.2014, ♀; Çat, Yukarı Çat, N 39°39′46.3″, E 041°00′56.2″, 2162m, 23.VII.2011, ♀; Hınıs, N 39°52′33″, E 041°16′46″, 1955 m, 26.VI.2011, 3♂♂, 1742m, 2.VII.2010, ♂, Akören, N 39°27′47.9″, E 041°42′14.3″, 1828 m, 16.VII.2011, ♀, N 39°29′08.6″, E 041°42′02.3″, 1939 m, 17.VII.2012, ♀; Horasan, 1580 m, 22.VI.2014, ♂, Çayırdüzü, N 40°08′21.9″, E 042°03′47.4″, 1799 m, 22.VI.2012, 2♀♀, ♂, Çiftlik, N 40°4′44.3″, E 042°19′7.4″, 1546 m, 17.VII.2011, 2♀♀, Dönertaş, N 40°13′33.4″, E 042°06′58.5″, 2009 m, 13.VIII.2012, ♀, Kızlarkale, N 40°09′57,8″, E 042°01′47,0″, 1953m, 22.VI.2012, ♀, Muratbağı, N 40°09′12.2″, E 042°03′02.7″, 1852m, 22.VI.2012, ♂, Yeşildere, N 40°07′04.9″, E 042°05′29.5″, 1698 m, 22.VI.2012, ♂; Köprüköy, Ilıcasu, 2380 m, 17.VII.2010, ♂, N 40°5′39.6″, E 041°51′57.1″, 2111m, 30.VII.2011, 3♀♀, Karataşlar, N 39°50′54.7″, E 041°58′11.3″, 1848 m, 13.VIII.2011, ♀; Narman, 1565 m, 21.VII.2010, 2♀♀, 1900 m, 24.VII.2009, 5♀♀, Dikmetaş, 2665 m, 17.VII.2010, 6♀♀, İncedere, 1987 m, 21.VII.2010, 3♀♀, 4♂♂, Samikale, N 40°21′57.5″, E 041°55′20.6″, 1541m, 30.VII.2011, ♀, Şehitler, N 40°19′54.9″, E 041°46′39.2″, 1884 m, 16.VII.2012, 2♀♀, Yanıktaş, 1638 m, 4.VIII.2009, ♀; Oltu, Çamlıbel, 1700 m, 14.VII.1996, 3♀♀, N 40°29′06″, E 041°45′47″, 1635 m, 14.VII.2014 m, 3♀♀, İğdeli, N 40°32′44.8″, E 041°50′27.6″, 1660 m, 30.VI.2012, ♂, Sütkans, 25.VI.1996, ♀, Toprakkale, N 40°27′55.5″, E 041°59′21.1″, 1416 m, 23.VI.2011, ♀, Tutmaç, N 40°26′46.6″, E 041°44′06.5″, 1756 m, 6.VII.2012, ♀; Palandöken, Palandöken Mountain, 2300 m, 21.VII.2010, ♀, N 39°51′56.4″, E 041°16′19.7″, 2155 m, 22.VII.2012, ♀; Pasinler, Yayla, N 40°05′42.7″, E 041°44′03.5″, 1990 m, 17.VII.2011, ♀, ♂; Pazaryolu, N 40°25′12.6″, E 040°46′13.9″, 1430 m, 24.VI.2012, 4♀♀, Çiftepınar, N 40°22′05.3″, E 041°43′07.4″, 1742m, 15.VII.2012, 3♀♀, ♂, Gülçimen, N 40°24′55.8″, E 040°47′29.9″, 1617 m, 24.VI.2012, ♀, ♂, N 40°24′36.4″, E 040°47′28.5″, 1663m, 20.VII.2011, 2♀♀; Şenkaya, Başaklı, N 40°29′19.2″, E 041°48′18.6″, 1586 m, 13.VII.2011, ♀, Esenyurt, N 40°25′40.2″, E 042°18′15.2″, 1622m, 14.VII.2012, ♀, Gaziler, N 40°25′27.0″, E 042°20′39.4″, 1810 m, 14.VII.2012, 2♀♀, ♂, Gözebaşı, N 40°24′39.9″, E 042°18′11.5″, 1704 m, 14.VII.2012, ♂, İçmesu, N 40°25′27.0″, E 042°18′32.1″, 1656 m, 14.VII.2012, 2♀♀, 2♂♂; Tortum, 1653m, 15.VI.2010, ♀, 4♂♂, N 40°16′37.4″, E 041°33′30″, 1661m, 23.VI.2011, 2♂♂, N 40°16′38″, E 041°33′29.9″, 1660 m, 31.VII.2011, ♀, Aksukapı, N 40°25′59″, E 041°35′30″, 1750 m, 14.VII.2014, ♀, Aktaş, N 40°15′40.5″, E 041°32′39.2″, 1765 m, 31.VII.2011, 3♀♀, Aşağı Sivri, N 40°19′33.8″, E 041°31′46.9″, 1546 m, 16.VII.2012, ♀, Taşbaşı, N 40°15′26.6″, E 041°32′13.8″, 1816 m, 13.VII.2011, 2♀♀, 3♂♂, Yukarı Sivri, N 40°20′38.3″, E 041°38′51.3″, 1909 m, 16.VII.2012, ♀, N 40°20′27.5″, E 041°39′01.1″, 1962m, 16.VII.2012, ♀, ♂; Yakutiye, Atatürk University field, N 39°53′59.1″, E 041°14′19.0″, 1880 m, 22.VII.2011, ♀, Güzelyayla,

2000 m, 19.VIII.2009, 6♀♀, Karagöbek, N 40°10′15.1″, E 041°26′14.9″, 2033m, 13.VII.2011, ♀, 2♂♂; Uzundere, Yayla, N 40°27′48.6″, E 041°39′32.3″, 2005 m, 10.VI.2012, 2♂♂, N 40°27′48.6″, E 041°39′32.3″, 2005 m, 13.VII.2011, ♀, 2♂♂; Kars: Sarıkamış, Karakurt, 1500 m, 22.VI.2010, 3♀♀, 2♂♂.

Distribution in Turkey: Kocaeli, Sakarya (ÖNDER et al. 1981); Bilecik, Isparta, Manisa (ÖNCÜER 1991); Bursa (GENÇER et al. 2004).

Subgenus *Camptobrochis* FIEBER, 1858

***Deraeocoris* (*Camptobrochis*) *pallens* (REUTER, 1904)**

Material examined: Antalya: 9.VIII.1984, ♀; Erzincan: 1185 m, 10.VI.2010, ♀, Akyazı, 1202m, 11.VI.2010, ♀, Mercan, 11.VII.1990, ♀; Erzurum: Aşkale, Çayköy, N 39°56′46.6″, E 040°48′27.4″, 1720 m, 21.VI.2011, ♀, ♂; Aziziye, Yarımca, 1950 m, 20.VII.2010, ♀; Horasan, Çayırdüzü, N 40°8′34.8″, E 042°3′23.5″, 1794 m, 21.VIII.2011, ♀, Yeşildere, N 40°07′04.9″, E 042°05′29.5″, 1698 m, 22.VI.2012, ♀; İspir, 1259 m, 30.VII.2010, ♀, 1300 m, 7.VIII.2009, ♀, Madenköprübaşı, N 40°26′34.3″, E 040°50′42.4″, 1245 m, 4.VIII.2012, ♂; Olur, Coşkunlar, N 40°44′32.7″, E 042°11′11.4″, 1054 m, 30.VII.2011, ♀; Pasinler, 11.VII.1987, ♀, 25.VII.1987, ♀, 22.VIII.1987, ♀, ♂, Ovaköy, N 39°58′56″, E 041°29′38″, 1782m, 31.VII.2014, 2♀♀, Övenler, N 39°59′17″, E 041°34′43.9″, 1710 m, 21.VIII.2011, ♂; Pazaryolu, 1450 m, 24.VII.2011, ♀; Şenkaya, Sındıran, N 40°37′20″, E 042°21′34″, 1409 m, 14.VII.2014, ♀, 1491m, 31.VII.2010, ♂; Tekman, Güzeldere, N 39°49′17.1″, E 042°00′19.8″, 1948 m, 16.VII.2011, 2♀♀; Yakutiye, Atatürk University field, 1850, 16.VII.2008, ♀, 25.VIII.1998, ♀; İstanbul: Kartal, 2.VIII.1884, ♀; Kars: Sarıkamış, Akkurt, 1650 m, 13.VIII.2009, ♀; Kayseri: Yahyalı, 17.VII.1997, ♀.

Distribution in Turkey: Artvin, İçel (ÖNDER 1976); Antalya (ÖZKAN 1984; ÖNCÜER 1991); Diyarbakır, Gaziantep, Mardin, Şanlıurfa (ÖNDER et al. 1995); Mersin (ULUBİLİR & YABAŞ 1995); Adana (ATAKAN 2000); Kilis, Osmaniye (LODOS et al. 2003); Diyarbakır, Gaziantep, Hatay, Kilis, Mardin, Mersin, Muğla, Osmaniye (ÖNDER et al. 2006); Kahramanmaraş (ÖLMEZ 2008); İzmir (TEZCAN et al. 2010).

***Deraeocoris* (*Camptobrochis*) *punctulatus* (FALLÉN, 1807)**

Material examined: Erzincan: 1185 m, 10.VI.2010, ♂; Erzurum: Aşkale, Çayköy, N 39°56′46.6″, E 040°48′27.4″, 1720 m, 21.VI.2011, 2♀♀; Aziziye, 1800 m, 8.X.2009, ♀, Dadaşkent, N 39°55′09.3″, E 041°12′20,7″, 1806 m, 12.VII.2014, ♀, Kayapa, 1750 m, 3.VI.2010, ♂, 23.VI.1980, ♂, 25.VII.1987, ♂, Ortabahçe, N 39°53′35.3″, E 040°51′19.0″, 1763m, 5.VII.2012, ♀, Paşayurdu, N 39°59′42.3″, E 041°00′18.3″, 1836 m, 18.VII.2012, ♀; Çat, 1810 m, 3.VI.2010, ♂; Köprüköy,1720 m, 2.VII.2010, 2♀♀, ♂, Marifet, N 39°50′03.1″, E 041°47′38.2″, 1685 m, 26.VI.2011, ♀, Örentaş, 2038 m, 29.VII.2010, ♂; Oltu, 27.VII.1987, ♂, 23.VIII.1987, ♂, Çamlıbel, N 40°29′06″, E 041°45′47″, 1635 m, 14.VII.2014 m, ♀; Olur, Yeşilbağlar, 1000 m,16.VI.2010, ♀; Palandöken, 2400 m, 21.VII.2010, ♀, Kümbet, N 39°48′59.7″, E 041°4′32.8″, 1832m, 5.VIII.2011, ♀; Pasinler, Ağcalar, 1900 m, 22.VIII.2007, 2♂♂, Dereboğazı, N 40°00′39.4″, E 041°38′23.9″, 1725 m, 12.VIII.2012, ♀, Ovaköy, N 39°58′56″, E 041°29′38″, 1782m, 31.VII.2014, ♀, ♂, N 39°58′56.1″, E 041°29′31.7″, 1785 m, 12.VIII.2012, ♀, 3♂♂, Serçeboğazı, N 40°00′39.4″, E 041°38′23.9″, 1725 m, 12.VIII.2012, ♀; Pazaryolu, 23.VII.1991, ♀; Şenkaya, Taht, N 40°38′29″, E 042°20′0.3″, 1232m, 14.VII.2014, ♀; Tortum, Arılı, N 40°22′11.6″, E 041°28′50.8″, 1428 m, 30.VIII.2012, ♂; Yakutiye, Atatürk University field, 1850 m, 7.VII.2008, ♀, 1800 m, 20.VII.2010, ♂, N 39°53′59.1″, E 041°14′19.0″, 1880 m, 22.VII.2011, ♂, 1800 m, 27.VII.1991, ♀, 31.VII.2007, ♀, ♂, 1850 m, 8.IX.2009, 4♀♀, ♂, Dadaşköy, N 39°55′39.5″, E 041°15′23.2″, 1806 m, 4.VIII.2011, ♂.

Distribution in Turkey: Adana, Afyon, Ağrı, Ankara, Antalya, Artvin, Aydın, Balıkesir, Burdur, Bursa, Çanakkale, Çorum, Denizli, Edirne, Erzurum,

Eskişehir, İçel, Isparta, Kayseri, Kırklareli, Kütahya, Muğla, Rize, Sakarya, Trabzon, Van (ÖNDER 1976); Diyarbakır (ÖNDER et al. 1995); Gaziantep, Hatay, Kahramanmaraş (LODOS et al. 2003); Almost all regions (ÖNDER et al. 2006); İzmir (TEZCAN et al. 2010); Mardin, Siirt (MATOCQ & ÖZGEN 2010); Elazığ (MATOCQ et al. 2014).

***Deraeocoris* (*Camptobrochis*) *serenus* (DOUGLAS & SCOTT, 1868)**

Material examined: Adana: Kozan, 23.VII.1984, 2♀♀; Antalya: 29.VII.1984, ♀, ♂; Artvin: 650 m, 3.VIII.2009, ♀, Şavşat, 400 m, 16.VI.2010, ♀, Yusufeli, Morkaya, 700 m, 15.VI.2010, ♀, Pamukçular, 700 m, 16.VI.2010, ♂; Bayburt: Çalıdere, 1700 m, 17.VI.2010, ♀, Demirözü, 1650 m, 17.VI.2010, ♀; Erzincan: Akyazı, 1408 m, 10.VI.2010, 2♀♀, Geyikli, 1160 m, 11.VI.2010, 2♀♀, ♂, Mercan, 23.VI.1990, ♀, 11.VII.1990, 2♀♀, 4♂♂, Tercan, 1408 m, 10.VI.2010, 4♀♀, 2♂♂, Üzümlü, 1518 m, 10.VI.2010, ♀, 31.VII.1991, ♀; Erzurum: Aşkale, Çayköy, N 39°56′46.6″, E 040°48′27.4″, 1720 m, 21.VI.2011, ♀, 2♂♂, Merdiven, N 39°53′45.2″, E 040°48′29.9″, 1706 m, 9.VIII.2011, 2♀♀, 2♂♂; Aziziye, 1800 m, 8.IX.2009, ♀, Alabeyli, 11.VII.1990, ♀, Demirgeçit, N 39°56′40.0″, E 041°01′09.0″, 1747 m, 5.VII.2012, ♀, Ortabahçe, N 39°53′35.3″, E 040°51′19.0″, 1763m, 5.VII.2012, ♀, ♂, Paşayurdu, N 39°59′42.3″, E 041°00′18.3″, 1836 m, 18.VII.2012, ♀, Sorkunlu, N 40°5′2.9″, E 040°57′41.6″, 1865 m, 24.VII.2011, ♀, Söğütlü, 12.VIII.1983, 8♀♀, 7♂♂; Çat, 1894 m, 29.VI.2009, ♀, N 39°35′42.4″, E 040°57′59.6″, 1913m, 23.VII.2011, 3♀♀, ♂, 2250 m, 6.VIII.2010, ♀, Yaylasuyu Geçidi, 2322m, 29.VI.2009, 2♀♀, Yukarı Çat, N 39°39′46.3″, E 041°00′56.2″, 2162m, 23.VII.2011, 3♀♀, 4♂♂; Hınıs, Parmaksız, 1808 m, 2.VII.2009, ♀, Horasan, N 40°00′53″, E 041°59′06″, 1588 m, 22.VII.2014, ♀, Çayırdüzü, N 40°8′34.8″, E 042°3′23.5″, 1794 m, 21.VIII.2011, ♀, ♂, Değirmenli, N 40°05′10.7″, E 042°07′01.0″, 1643m, 13.VIII.2011, 2♂♂, Yeşildere, N 40°07′04.9″, E 042°05′29.5″, 1698 m, 22.VI.2012, ♀; İspir, N 40°29′20.4″, E 041°00′31″, 1236 m, 22.VI.2011, ♂, 1259 m, 30.VII.2010, 2♀♀, 1300 m, 7.VIII.2009, ♀, Madenköprübaşı, N 40°25′58.4″, E 040°50′11.3″, 1307 m, 20.VII.2011, 2♀♀, 2♂♂, N 40°26′34.3″, E 040°50′42.4″, 1245 m, 4.VIII.2012, ♂, Sütkans, 4.VI.1990, ♂, Yukarı Özbağ, N 40°26′45.1″, E 040°54′24.8″, 1190 m, 20.VII.2011, 2♂♂; Karayazı, Yukarı Söylemez, 1896 m, 2.VII.2010, ♀; Köprüköy, 1720 m, 2.VII.2010, ♀, N 39°57′55.2″, E 041°51′02.3″, 1621m, 13.VIII.2011, ♂, Marifet, N 39°50′03.1″, E 041°47′38.2″, 1685 m, 26.VI.2011, ♀, ♂; Narman, 30.VI.1989, ♂; Oltu, 27.VI.1987, 4♂♂, 23.VII.1887, 2♀♀, 27.VII.1987, 3♀♀, 2♂♂, 21.VIII.1987, ♂, Çamlıbel, N 40°29′06″, E 041°45′47″, 1635 m, 14.VII.2014 m, 3♀♀, N 40°28′34.3″, E 041°46′24.1″, 1682m, 31.VII.2011, ♀, Duralar, N 40°28′31,5″, E 041°58′42,4″, 1421m, 30.VII.2011, ♂, Sarısaz, N 40°32′00.9″, E 041°54′27.2″, 1421m, 30.VIII.2012, 3♂♂; Olur, Coşkunlar, N 40°44′32.7″, E 042°11′11.4″, 1054 m, 30.VII.2011, ♂, Kaledibi, 1070 m, 4.VIII.2009, 2♀♀, Köprübaşı, N 40°47′19.0″, E 042°08′32.0″, 994 m, 19.VII.2012, 3♂♂, Ormanağzı, N 40°45′57.7″, E 042°04′30.8″, 955 m, 19.VII.2011, ♀, ♂; Palandöken, 2000 m, 8.VIII.2009, ♀, Kümbet, N 39°48′59.7″, E 041°4′32.8″, 1832m, 5.VIII.2011, 2♀♀, Taşlıgüney, 2032m, 26.VI.2009, ♀, N 39°47′46.7″, E 041°6′41.1″, 1968 m, 9.VIII.2011, ♀, ♂; Pasinler, 11.VII.1987, ♀, 4♂♂, 25.VII.1983, 5♂♂, 25.VII.1987, 3♀♀, 2♂♂, 1.VIII.1983, ♂, 9.VIII.1983, ♀, 22.VIII.1987, 2♀♀, 2♂♂, 11.IX.1987, ♂, Ağcalar, 1850 m, 22.VIII.2007, 2♀♀, Çöğender, 1737 m, 29.VII.2010, ♀, Övenler, N 39°59′17″, E 041°34′43.9″, 1710 m, 21.VIII.2011, 2♂♂, Ovaköy, N 39°58′56″, E 041°29′38″, 1782m, 31.VII.2014, ♂, N 39°58′56.1″, E 041°29′31.7″, 1785 m, 12.VIII.2012, ♀, 3♂♂, Serçeboğazı, N 40°00′39.4″, E 041°38′23.9″, 1725 m, 12.VIII.2012, ♀, Yayla, N 40°05′42.7″, E 041°44′03.5″, 1990 m, 17.VII.2011, ♂; Pazaryolu, 23.VII.1991, ♀, N 40°25′12.8″, E 040°46′13.5″, 1450 m, 24.VII.2011, 2♀♀, ♂, Gülçimen, N 40°24′36.4″, E 040°47′28.5″, 1663m, 20.VII.2011, ♀, ♂; Şenkaya, İkizpınar, N 40°36′57.4″, E 042°21′30.9″, 1589 m, 31.VII.2011, 3♂♂, Penek, N 40°39′16.6″, E 042°17′12.9″, 1145 m, 19.VII.2011, ♂, Taht, N 40°37′59.4″, E 042°20′39.7″, 1283m, 31.VII.2011, ♂, Turnalı, 1750 m, 25.VII.1996, 2♂♂; Tekman, Güzeldere, N 39°49′17.1″, E 042°00′19.8″, 1948 m, 16.VII.2011, 3♀♀, ♂; Tortum, Akbaba, N 40°13′32.6″, E 041°29′4.1″, 2073m, 31.VII.2011, ♀, Aksukapı, N 40°23′58.8″, E 041°32′46.4″, 1648 m, 13.VII.2011, ♀, Arılı, N 40°22′11.6″, E 041°28′50.8″, 1428 m, 30.VIII.2012, ♀, Derekapı, N 40°24′47.2″, E 041°29′19.4″, 1247 m, 13.VII.2011, 2♀♀, 3♂♂; Yakutiye, Atatürk University field, 2.VII.1995, ♂, 1850 m, 7.VII.2008, 3♀♀, 11.VII.2008, ♀, 16.VII.2008, ♀, 18.VII.1972, ♂, 18.VII.1983, ♀, ♂, 18.VII.1997, ♂, 22.VII.2009, ♀, N 39°53′59.1″, E 041°14′19.0″, 1880 m, 22.VII.2011, ♂, 23.VII.1980, ♀, 25.VII.1987, ♀, ♂, 1850 m, 27.VII.1996,

♂, 1.VIII.2008, ♂, 8.VIII.1998, ♀, 8.VIII.2008, ♀, 10.VIII.1987, ♂, 10.VIII.1998, ♀, 20.VIII.2010, ♀, 25.VIII.1998, 3♀♀, 8.IX.2009, 4♀♀, 18.IX.1978, ♂, Dadaşköy, N 39°55′39.5″, E 041°15′23.2″, 1806 m, 4.VIII.2011, ♂, Karagöbek, 1977 m, 31.VII.2010, 4♀♀; Uzundere, Yedigöller, N 39°18′17.0″, E 041°55′19.0″, 855 m, 7.VI.2012, ♂; Giresun: 9.VIII.1990, ♂; Iğdır: 850 m, 20.VI.2009, ♂, Tuzluca, 900 m, 19.VI.2009, ♀, Menderes, 1100 m, 23.VI.2010, ♂; İstanbul: Kartal, 2.VIII.1884, ♀; Kars: Kağızman, 23.VIII.1991, ♀, Sarıkamış, 1900 m, 13.VIII.2009, ♀, Akkurt, 1650 m, 13.VIII.2009, 2♀♀, Karakurt, 1500 m, 13.VIII.2009, ♀; Kayseri: Himmetdede, 2.IX.1997, ♀, Yahyalı, 17.VII.1997, ♀: Mersin: Tarsus, 15.VII.1995, ♂; Tunceli: Pülümür, Armağan, 1689 m, 12.VIII.2011, ♀.

Distribution in Turkey: Afyon, Ağrı, Artvin, Aydın, Bilecik, Burdur, Çanakkale, Denizli, Edirne, Hakkâri, Kırklareli, Kütahya, Muğla, Tekirdağ, Uşak, Van, Yozgat (ÖNDER 1976); Bolu, İstanbul, Kocaeli, Sakarya (ÖNDER et al. 1981); Antalya (ÖZKAN 1984); Malatya (ÖNCÜER 1991); Diyarbakır, Gaziantep, Mardin (ÖNDER et al. 1995); Erzurum (YILDIRIM et al. 1999); Manisa (BEYAZ 2000; TEZCAN & ÖNDER 2003); İzmir (YAŞARAKINCI & HINCAL 2000; TEZCAN et al. 2010); Adana, Ankara, Çankırı, Çorum, Eskişehir, Hatay, İçel, Karabük, Karaman, Kastamonu, Kayseri, Kırşehir, Kilis, Konya, Nevşehir, Niğde, Sinop (LODOS et al. 2003); Bursa (GENÇER et al. 2004); Balıkesir (AYYILDIZ & ATLIHAN 2006); Almost all regions (ÖNDER et al. 2006); Kahramanmaraş (ÖLMEZ 2008); Elazığ (MATOCQ et al. 2014).

Subgenus *Knightocapsus* WAGNER, 1963

Deraeocoris (*Knightocapsus*) *lutescens* (SCHILLING, 1837)

Material examined: Adana: Kozan, 28.VII.1984, ♀, ♂; Antalya: 29.VII.1984, ♀; Erzincan: Cevizli, 29.VIII.1991, ♂, Üzümlü, Bayırbağ, 31.VII.1991, 3♀♀; Erzurum: Aşkale, Kop Mountain, N 40°01′57.1″, E 040°31′0.8″, 2380 m, 5.IX.2012, ♀; İspir, 24.VII.1991, ♀, Çayırözü, N 40°33′13.4″, E 040°54′44.0″, 1947 m, 4.VIII.2012, ♂, Zeyrek, N 40°18′30″, E 040°59′24″, 2073m, 22.VI.2011, ♀; Oltu, 4.IX.1991, 2♀♀, Başbağlar, N 40°28′1.1″, E 041°40′27.6″, 1925 m, 13.VII.2011, ♀; Olur, Taşlıköy, 20.VIII.1992, ♀; Pazaryolu, 11.VII.1991, ♀, 23.VII.1991, 7♀♀, ♂, 1453m, 30.VII.2010, ♀; Şenkaya, Taht, N 40°37′59.4″, E 042°20′39.7″, 1283m, 31.VII.2011, ♀; Tortum, Pehlivanlı, 13.VIII.1991, ♂; Iğdır: 7.VII.1992, ♀, 18.VII.1992, ♂, 7.VIII.1991, 2♀♀, Melekli, 18.VII.1992, ♂.

Distribution in Turkey: Afyon, Isparta, Kırklareli, Kocaeli, Ordu, Rize, Sinop, Trabzon, Uşak (ÖNDER 1976); Bursa, Kocaeli, Sakarya (ÖNDER et al. 1981); Antalya (ÖZKAN 1984; ÖNCÜER 1991); Tokat (ÇAM 1988); Kayseri (ÇEVİK 1996); Ankara, Artvin, Balıkesir, Bartın, Bilecik, Bolu, Bursa, Çankırı, Çorum, Eskişehir, Kahramanmaraş, Karabük, Karaman, Kastamonu, Konya, Kütahya, Niğde, Yozgat, Zonguldak (LODOS et al. 2003); Manisa (TEZCAN & ÖNDER 2003); Aegean, Marmara and Black Sea Regions (ÖNDER et al. 2006); İzmir (TEZCAN et al. 2010); Elazığ (MATOCQ et al. 2014).

Acknowledgments

We are grateful to Dr. Rauno Linnavuori (Finland), Dr. Chérot Frédéric (Belgium) and Prof. Dr. Jacek Gorczyca (Poland) for determining of the reference material.

The study was supported by the Atatürk University Scientific Research Fund (Project Number: 2009/23) and is a partial summary of Gülten Yazıcı's PhD thesis (Atatürk University, Institute of Science, Department of Plant Protection), adopted on 11.05.2015.

Zusammenfassung

Vorliegende Arbeit behandelt Wanzen (Heteroptera) der Familie Miridae basiernd auf verschiedenen Aufsammlungen in der Türkei im Zeitraum 1972 bis 2014, insbesondere 2006 bis 2014. Es konnten 2 Arten aus einer Gattung der Unterfamilie Bryocorinae sowie acht Arten aus 2 Gattungen der Unterfamilie Deraeocorinae für die Türkei nachgewiesen werden.

References

ALTINAYAR G. (1981): Orta Anadolu Bölgesi tahıl tarlalarındaki böcek faunasının saptanması üzerinde çalışmalar — Bitki Koruma Bülteni **21** (2): 53-88.

ATAKAN E. (2000): Avcı böcek *Chrysoperla carnea* S. (Neuroptera: Chrysopidae), *Deraeocoris pallens* REUT. (Hemiptera: Miridae) ve *Orius niger* WOLFF (Hemiptera: Anthocoridae)'nin pamuk bitkisinde Mountainlımı. — Türkiye Entomoloji Dergisi **24** (4): 267-277.

AYYILDIZ Y. & R. ATLIHAN (2006): Balıkesir İli sebze alanlarında görülen yaprakbiti türleri ve doğal düşmanları. — Yüzüncü Yıl Üniversitesi, Ziraat Fakültesi, Tarım Bilimleri Dergisi **16** (1): 1-5.

BASNAGALA S., WIJESEKARA G.A.W. & H.N.P. WIJAYAGUNASEKARA (2002): Review of the Subfamily Bryocorinae (Heteroptera: Miridae) of Sri Lanka. — Tropical Agricultural Research **14**: 154-164.

BEYAZ G. (2000): Manisa yöresi kültür kekiği (*Origanum* spp.) üretim alanlarındaki Heteroptera takımına bağlı böcek faunasının belirlenmesi üzerine araştırmalar. — Ege Üniversitesi, Fen Bilimleri Enstitüsü, Yüksek Lisans Tezi, 52 s.

BİNGÖL C.M. (1978): Güneydoğu Anadolu Bölgesi'nde kültür yem bitkilerinde zarar yapan Miridae ve Curculionidae familyalarına ait böcek türleri, tanınmaları ve zararları üzerinde araştırmalar. — Bölge Zirai Mücadele Araştırma Enstitüsü, Diyarbakır, **4**: 7.

CASSIS G., WALL M. & R.T. SCHUH (2006): Insect bodiversity and industrialising the taxonomic process: the Plant Bug Case Study (Insect: Heteroptera: Miridae). — Reconstructing the Tree of Life, The Systematics Association Special Volume Series **72**: 193-212.

CASSIS G. & R.T. SCHUH (2012): Systematic, biodiversity, biogeography, and host associations of the Miridae (Insecta: Hemiptera: Heteroptera: Cimicomorpha). — The Annual review of Entomology **57**: 377-404.

ÇAM H. (1988): Tokat ve çevresinde kiraz, vişne ve idris ağaçlarında bulunan Heteroptera türlerinin tanınmaları ve beslenme rejimleri üzerinde araştırmalar. — Ege Üniversitesi Fen Bilimleri Enstitüsü, Yüksek Lisans Tezi, İzmir, 52 s.

ÇETIN H. & Ö. ALAOĞLU (2005): Mut (Mersin) İlçesinde zeytin ağaçlarında bulunan yararlı böcek türlerinin tespiti ve önemli türlerin popülasyon değişimi. — Selçuk Üniversitesi, Ziraat Fakültesi Dergisi **19** (36): 59-65.

ÇEVIK T. (1996): Orta Anadolu Bölgesi ceviz ağaçlarında zararlı ve faydalı faunanın tespiti üzerinde araştırmalar. — Bitki Koruma Bülteni **36** (1-2): 55-72.

GENÇER N.S., KOVANCI O.B., KOVANCI B. & H. C. AKGÜL (2004): Bursa ili çilek üretim alanlarında bulunan Hemiptera takımı türleri. — Türkiye Entomoloji Dergisi **28** (1): 69-80.

GÜÇLÜ Ş., HAYAT R. & H. ÖZBEK (1995a): Erzurum ve çevre illerde ceviz (*Juglans regina* LINNAEUS)'de bulunan fitofag böcek türlerinin tespiti üzerine araştırmalar. — Türkiye Entomoloji Dergisi **19** (2): 137-145.

GÜÇLÜ Ş., HAYAT R. & H. ÖZBEK (1995b): Artvin yöresinde zeytin (*Olea europaea* L.) 'de bulunan fitofag ve predatör böcek türleri. — Türkiye Entomoloji Dergisi **19** (3): 231-240.

HOBERLANDT L. (1955): Results of the zoological scientific expedition of the national museum in Praha to Turkey. — Acta Entomologica Musei Nationalis Pragae **3**: 261 pp.

KARAAT Ş. (1986): Doğu ve Güneydoğu Anadolu Bölgelerinde tütün (*Nicotiana tabacum* L.)'de zararlı olan böcek türleri, tanınmaları, yayılış alanları ve zararları üzerinde araştırmalar. — Diyarbakır Bölge Zirai Mücadele Araştırma Enstitüsü Müdürlüğü, Araştırma Eserleri Serisi: **4**: 74 s.

KIYAK S., ÖZSARAÇ Ö. & A. SALUR (2004): Additional notes on the Heteroptera fauna of Nevşehir province (Turkey). — G.U. Journal of Science **17** (1): 21-29.

LODOS N., ÖNDER F., PEHLIVAN E. & R. ATALAY (1978): Ege ve Marmara Bölgesinin zararlı bölge faunasının tespiti üzerine çalışmalar. — T.C. Gıda-Tarım ve Hayvancılık Bakanlığı Zirai Mücadele ve Zirai Karantina Genel Müdürlüğü, Ankara, 135-136.

LODOS N., ÖNDER F., PEHLIVAN E., ATALAY R., ERKIN E., KARSAVURAN Y. & S. TEZCAN (1989): Akdeniz bölgesinin ziraatta zararlı ve faydalı böcek faunasının tespiti üzerinde araştırmalar [Curculionidae, Scarabaeidae (Coleoptera), Plataspidae, Cydnidae, Acathosomatidae, Scutelleridae, Pentatomidae, Lygaeidae, Miridae (Hemiptera)]. — Ege Üniversitesi, Ziraat Fakültesi, Bitki Koruma Bölümü, Bornova, İzmir, 75 s.

LODOS N., ÖNDER F., PEHLIVAN E., ATALAY R., ERKIN E., KARSAVURAN Y., TEZCAN S. & S. AKSOY (2003): Faunistic studies on Miridae (Hemiptera) of western Black Sea, Central Anatolia and Mediterranean Regions of Turkey. — Department of Plant Protection Faculty of Agriculture University of Ege 35100 Bornova, İzmir, Turkey, 85 s.

MATOCQ A. & İ. ÖZGEN (2010): A preliminary list of Heteroptera collected in Mardin and Siirt provinces from South-Eastern Anatolia of Turkey (Hemiptera). — Munis Entomology & Zoology **5**: 1011-1019.

MATOCQ A., PLUOT-SIGWALT D. & İ. ÖZGEN (2014): Terrestrial Hemiptera (Heteroptera) collected in South-East Anatolia (Diyarbakır, Mardin and Elazığ Provinces) (Turkey): Second List. — Munis Entomology & Zoology **9** (2): 884-930.

ÖLMEZ M. (2008): Kahramanmaraş İli mısır alanlarında zararlı ve yararlı faunanın belirlenmesi ve önemli zararlıların popülasyon gelişimi takibi. — Kahramanmaraş Sütçü İmam Üniversitesi, Fen Bilimleri Enstitüsü, Yüksek Lisans Tezi, Kahramanmaraş, 39 s.

ÖNCÜER C. (1991): Türkiye bitki zararlısı böceklerinin parazit ve predatör kataloğu. — Ege Üniversitesi Ziraat Fakültesi Yayınları, No: **505**, 15-33.

ÖNDER F. (1976): Türkiye Miridae (Hemiptera) faunası üzerinde sistematik çalışmalar. — Ege Üniversitesi Ziraat Fakültesi, Entomoloji ve Zirai Zooloji Kürsüsü, Doçentlik Tezi, İzmir, 506 s.

ÖNDER F., ÜNAL A. & E. ÜNAL (1981): Hemiptera fauna collected by light traps in some districts of northwestern part of Anatolia. — Türkiye Bitki Koruma Dergisi **5** (3): 151-169.

ÖNDER F. & N. LODOS (1987): Türkiye'de bulunan predatör Hemiptera türleri üzerinde genel bir değerlendirme. — Türkiye Entomoloji Dergisi **11** (2): 117-125.

ÖNDER F., KARSAVURAN Y. & S. TEZCAN (1990): Yabancı ot savaşında potansiyel öneme sahip Türkiye Hemiptera faunası üzerinde araştırmalar. — Çevre Biyolojisi Sempozyumu, Ankara, 15.

ÖNDER F. KARSAVURAN Y. & E.E. ÖRÜMLÜ (1995): Güneydoğu Anadolu Projesi (GAP) uygulama alanında saptanan Cimicoidea ve Tingoidea (Heteroptera) türlerinin durumu ve gelecek için düşündürdükleri. — GAP Bölgesi Bitki Koruma Sorunları ve Çözüm Önerileri Sempozyumu Bildirileri, 27-29 Nisan, Şanlıurfa, 149-158.

ÖNDER F., KARSAVURAN Y. & S.TEZCAN (1998): Investigations on the vertical distribution in the habitats of plant bugs (Hemiptera: Miridae) of Turkey. — Ege Üniversitesi Ziraat Fakültesi Dergisi **35** (1-3): 33-40.

ÖNDER F., KARSAVURAN Y., TEZCAN S. & M. FENT (2006): Türkiye Hemiptera Kataloğu. — Meta Basım Matbaacılık Hizmetleri, İzmir, 164 s.

ÖZBEK H. & Ö. ALAOĞLU (1987): Erzurum ve çevresinde patates bitkisinde bulunan fitofag Hemiptera türleri. — Bitki Koruma Bülteni **27** (3-4): 227-238.

ÖZKAN A. (1984): Antalya ve çevresi yumuşak çekirdekli meyve ağaçlarının Coleoptera ve Hemiptera takımlarına ait faydalı böcek türleri, tanınmaları, konukçuları ve önemlilerinin etkinlikleri üzerine araştırmalar. — Biyolojik Mücadele Araştırma Enstitüsü, Antalya, 65 s.

ÖZSARAÇ Ö. & S. KIYAK (2001): A study on the Hemiptera fauna of Bozcaada (Çanakkale Province). — Turkish Journal of Zoology **25**: 313-322.

TEZCAN S. & F. ÖNDER (1999): Heteropterous insects associated with cherry trees in Kemalpaşa district of İzmir, Turkey. — Ege Üniversitesi Ziraat Fakültesi Dergisi **36** (1-3): 119-124.

TEZCAN S. & F. ÖNDER (2003): İzmir ve Manisa illeri ekolojik kiraz bahçelerinin faunası üzerinde araştırmalar: Hemiptera takımına bağlı türler üzerinde bir değerlendirme. — Anadolu **13** (1): 124-131.

TEZCAN S., TEZCAN F. & N. GÜLPERÇIN (2010): İzmir'den 4000 Böcek Türü. — Egetan Bas. Yay. Tan. Ltd. Şti., İzmir, 250 s.

ULUBILIR A. & C. YABAŞ (1995): Çukurova' da açık alanlarda yetiştirilen sebzelerde Beyazsinek (*Bemisia tabaci* GENN.)' in popülasyon değişimi, doğal düşmanları ve mücadelesi üzerinde araştırmalar. — Bitki Koruma Bülteni **35** (3-4): 191-210.

YAŞARAKINCI N. & P. HINCAL (1997): İzmir ilinde örtü altında yetiştirilen domates, hıyar, biber ve marulda bulunan zararlı ve faydalı türler ile bunların popülasyon yoğunlukları üzerinde araştırmalar. — Bitki Koruma Bülteni **37** (1-2): 79-89.

YAŞARAKINCI N. & P. HINCAL (2000): İzmir ilinde örtü altında yetiştirilen patlıcanda bulunan zararlılar ile bunların doğal düşmanları ve popülasyon gelişmeleri üzerinde çalışmalar. — Bitki Koruma Bülteni **40** (1-2): 29-48.

YAYLA A. (1983): Antalya ve çevresi zeytin ağaçlarında rastlanan faydalı Hemipter'lerin tanınmaları, konukçuları ve etkinlikleri üzerine araştırmalar. — Biyolojik Mücadele Araştırma Enstitüsü, Antalya, 58 s.

YILDIRIM E. & H. ÖZBEK (1992): Erzurum Şeker Fabrikasına bağlı şekerpancarı üretim alanlarındaki zararlı ve yararlı böcek türleri. — Türkiye II. Entomoloji Kongresi, 28-31Ocak 1992, Adana, 621-635.

YILDIRIM E., ÖZBEK H. & F. ÖNDER (1999): Atatürk Üniversitesi (Erzurum) kampüs alanında ışık tuzaklarında yakalanan Hemiptera türleri üzerinde bir araştırma. — Türkiye Entomoloji Dergisi **23** (3): 225-228.

WHEELER A.G. & J.T. HENRY (2004): Plant Bugs (Hemiptera: Miridae). — Encyclopedia of Entomology, USA.

WHEELER A.G. (2001): Biology of the plant bugs. — Cornell University Press, Ithaca, NY, 507 pp.

WHEELER A.G. & J.F. SKAFTASON (2010): Notes on the feeding behavior of *Teratocoris saundersi* (Hemiptera: Miridae) in Iceland: phytophagy, zoophagy, and adventitious biting. — Acta Entomologica Musei Nationalis Pragae **50** (1): 45-52.

Authors' addresses: Dr. Gülten YAZICI
Directorate of Plant Protection Central Research Institute,
Gayret Mahallesi. Fatih Sultan Mehmet Bulvarı. No: 66
TR-06172 Yenimahalle/Ankara
E-mail: gultenkulekci@hotmail.com

Prof. Dr. Erol YILDIRIM
Atatürk University, Faculty of Agriculture
Department of Plant Protection
TR-25240, Erzurum, Turkey
E-mail: yildirimerol@hotmail.com